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ABSTRACT

Use of the School Climate and Context Inventory (SCCI) as a measure of school climate was investigated. The SCCI had previously been used as a measure of climate in a study of six rural high schools in Kentucky and Tennessee; in the current study, the SCCI was administered to 20 faculty members from each school. Split-half correlation and Cronbach's alpha were used to evaluate internal consistency of the SCCI. Factor analysis was also used to evaluate the 45 items and 8 clusters of the SCCI. The evaluation of internal consistency indicates that the SCCI as a whole measures something in a consistent manner. No individual items need to be removed because they consistently lend themselves to multiple interpretations. One of the factor analyses indicates that almost all SCCI items load on one factor. Consequently, the climate of a school may be a whole, rather than a series of parts. The results suggest that there may be as many as 11 distinct factors being measured by the SCCI, although further study is needed to clarify the issue of school climate. Seven data tables and a six-item list of references are included. Appendices present the SCCI and a table of Guttman's partial correlations. (SLD)

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ASSESSING SCHOOL CLIMATE

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ASSESSING SCHOOL CLIMATE

I. INTRODUCTION

In a recent study of "good" Appalachian high schools (Bobbett, et al, 1991), Wayson's School Climate and Context Inventory (see Appendix A) was used as a measure of climate in the six high schools investigated. The original intent of this study was simply to provide more complete analysis of the climate factors originally found. However, statistical analyses of the available data also produced new findings about the Wayson instrument and new questions about the measurement of school climate. It is those findings that are reported and discussed here.

II. METHODOLOGY

A. Data From the Schools

The six high schools included in the original study were selected by means of a double-loop process. First, the Chief State School Officers (CSSO) in Kentucky and Tennessee were asked to identify the rural Appalachian districts in their states where the best high schools could be found. (Tennessee has 46 Appalachian rural county school districts; Kentucky has 32 county and 16 rural independent Appalachian school districts). The Kentucky CSSO identified six districts. In Tennessee, the researchers selected six districts based on their performance on the measures in Tennessee's Report Card on schools. The superintendent of each district agreed to participate in the study and nominated one high school within his/her district. The following data were collected for the twelve schools in the study:

1. average student performance on state competency tests;
2. average student performance on ACT/SAT examinations;
3. dropout rates;
4. percentage of students continuing on to post-secondary education (defined as any institution qualifying for federal student financial aid);
5. responses to a 16-item survey by all teachers in each school, by a sample of students in each school, and by a sample of members of the community served by each school (School Effectiveness Inventory (SEI)(Bobbett et al., 1990)).

Perceptions and identifiable, measurable school attributes were collectively evaluated. To narrow the field of schools from each state from six to three, a point ranking of the available data was developed using weights based on a scheme of relative importance:

The total points available were divided by six (the number of schools to be used in the study). Then, points were awarded to each school based on its performance relative to the other five

schools in its state (six schools were initially selected from Kentucky and six from Tennessee). Total points for each school were calculated, and the final school selection was based on the overall point total.

Wayson's SCCI was one of the instruments administered by researchers in their visits to each of the six finalist schools. The SCCI was administered to 20 faculty members from each school, thereby creating 120 total responses.

B. THE WAYSON SCHOOL CLIMATE AND CONTEST INVENTORY (SCCI)

The SCCI consists of 45 items which Wayson clustered into eight areas (1988), *a priori*. These cluster areas and their corresponding items are:

1. Staff members in good schools work together to solve problems and to improve the learning environment and outcomes (items 1-5, 37);
2. Staff members in good schools involve more people in making decisions, and they eliminate the status barriers that inhibit communication, teaching and learning (items 6-9, 41, 42, 44);
3. Staff in good schools make every student feel that he or she belongs in the school and is served well by it (items 10-15, 39, 40);
4. Staff members in good schools consider discipline to be a set of learned attitudes and behaviors and they teach them primarily by engaging students in the norms governing school life (items 16-19, 38, 45);
5. Staff members in good schools seek out and use curricula and instructional methods designed to reach all their students (items 20-23);
6. Staff members in good schools deal directly with students' personal problems before they manifest themselves in antisocial or unproductive behaviors (items 24-27);
7. Staff members in high confidence schools use the physical facilities in ways that enhance the learning environment and reinforce productive and effective relationships (items 28-31, 36, 43);
8. Staff members in good schools relate well with parents and other community members, welcoming them into the school and classrooms and meeting them comfortably in their homes and neighborhoods (items 32-35).

The investigators posed <u>one</u> research question (among several) as a means to studying the SCCI from the perspective of the data collected with it in the six schools:

What do the data produced in this study of "good" Appalachian high schools tell us about the SCCI and about the measurement of school climate?

In developing a response to the research question, two different types of analyses were conducted. **First**, the <u>Split-half correlation</u> and the <u>Cronbach Alpha</u> were used to evaluate the SCCI's internal consistency. **Second**, Factor Analyses was used to evaluate the SCCI's 45 items and 8 clusters which included "four" related statistical procedures--each portraying different

aspects of the instrument. First, Guttman's Partial Correlation was used to evaluate the relative weight of each of the 45 SCCI items (i.e., the item's correlation with itself). Second, the Orthogonal Transformation Solution and Oblique Solution Reference Structure-Orthotran/Varimax were used to evaluate each of the 45 items and their related Factors. The 45 SCCI questions and 8 corresponding clusters were compared to the Factors and their corresponding questions. Third, the Primary Intercorrelations-Orthotran/Varimax was used to compare each Factor to all other Factors. Fourth, the Proportionate Variance Contributions were used to determine each Factor's comparative weight.

III. FINDINGS

1. Internal Consistency of the Instrument

As previously stated, the Split-half correlation and the Cronbach Alpha were used to evaluate the internal consistency of the SCCI (see Table 1). The internal consistency , as measured by each statistic, was very high. It is clear that the instrument as a whole is measuring something in a consistent manner.

Table 1 The Split-Half correlation and the Cronbach Alpha for odd, even, and total items was used to analyze the SCCI's internal consistency.

SPLIT-HALF Correlation	.949
COEFFICIENT ALPHA - Odd items	.921
COEFFICIENT ALPHA - Even items	.939
COEFFICIENT ALPHA - All items	.965

2. The Validity of the Individual Items

As previously indicated, Guttmen's partial correlation was applied to each of the 45 items in the SCCI. Table 2 displays the five items with the lowest "self-correlations" and the five items with the highest "self-correlations." (The complete analysis of all 45 items is presented in Appendix B).

It is interesting to note that no two of the items with the lowest "r"s nor any two of those items with the highest "r"s were in the same clusters. However, it is more important to note that the lowest correlation was .55 and the highest .88. The "low" correlations are really not low, but solid, significant, mid-scale correlations. The highest correlations are very solid indeed. Clearly, each item in the SCCI is an item measuring what it is supposed to measure. There are no items that should be removed because they consistently lend themselves to multiple interpretations. There

are some items (those in the upper part of the correlation range) that could be seen as weighing more heavily in the definition of climate assumed by the instrument.

Table 2 Results of Guttman's Partial Correlation Analysis: the lowest and Highest Correlations

Questions	CL	"r"	SCCI question
			SMALLEST "r"
Q28	7	.55	Staff members know the neighborhood * , the street names, the stores, and the places of entertainment where their students live.
Q45	4	.56	School rules are written and steps are taken to see that each pupil/parent/school faculty member, etc., knows the rules, or has a copy of the rules (code of conduct).
Q40	3	.59	Each student has a definite contact, preferably an advocate, on the faculty.
Q7	2	.62	Each person accepts criticism from those who receive his/her services.
Q21	5	.63	Teachers choose the methods and materials which they can best use to achieve explicit goals.
			LARGEST "r"
Q19	4	.88	A few good rules are made and enforced rather than having many rules which aren't enforced.
Q39	3	.85	Teachers know and respect the students' languages, cultures, and individual styles.
Q32	8	.84	Staff members feel responsible for keeping the school environment attractive and clean.
Q44	2	.84	Discipline in our school is firm, fair and consistent. All students are treated equally; no group "gets away" with things.
Q1	1	.83	A sense of direction and mutual purpose is shared among many staff, students, and (to some extent) parents. (They can describe some goals and achievements in specific, understandable terms).

* (Emphasis added)

$p \leq .05 = ..288$ (two-tailed test), df = 45

3. Factors in the SCCI

a. Application of the Orthogonal Transformation Solution

Wayson saw the SCCI as containing eight distinct cluster areas or factors. These entities are quite logical when examined from the perspective of the literature on effective schools. However, when factor analysis using the Orthogonal Transformation Solution-Varimax was applied to the data from the six schools, confirmation of those eight clusters/factors was not obtained. As shown in Table 3, 43 (*Q17:CL4, and Q19: CL4 are the two exceptions*) of 45 items demonstrated significant correlations (correlations greater than .243) with a single factor (Factor

Table 3

Application of the Orthogonal Transformation Solution-Varimax

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	SCCI Cluster
Q1	.759	-.228	-.071	-.153	.172	.069	-.020	-.100	-.136	.197	.117	1
Q2	.695	-.136	-.141	-.042	-.133	.037	.113	-.161	-.062	.135	.321	1
Q3	.733	-.118	-.266	-.143	.012	-.160	-.143	-.094	-.132	.075	.230	1
Q4	.738	-.164	-.293	-.171	.046	-.067	-.004	-.111	.093	-.116	-.018	1
Q5	.623	.230	.082	-.140	.216	-.240	-.098	.139	-.052	.310	-.174	1
Q6	.635	-.284	-.248	.124	-.018	-.151	.002	-.274	.010	-.076	-.107	2
Q7	.529	-.003	-.328	.036	.388	-.186	.048	-.123	-.106	-.126	-.103	2
Q8	.456	.185	-.300	-.079	.406	.075	.376	.284	-.250	-.143	-.086	2
Q9	.637	.037	-.480	.057	.079	.035	.057	-.221	.050	.125	.210	2
Q10	.780	-.085	-.070	-.101	.261	-.107	.017	-.063	.215	-.111	-.111	3
Q11	.673	-.177	.039	.009	.452	-.136	.130	.122	.175	.117	.079	3
Q12	.626	-.105	.079	-.207	.137	.496	.052	.199	.039	.005	-.072	3
Q13	.678	.019	-.096	.003	-.210	.039	-.031	.349	.072	-.110	-.149	3
Q14	.797	-.143	.012	-.171	-.001	.030	-.016	.022	.185	-.146	.161	3
Q15	.484	.511	.140	.111	-.208	-.173	.155	-.219	-.176	-.343	-.084	3
Q16	.655	-.467	.099	.022	-.160	-.232	.152	.090	-.054	-.110	.007	4
Q17	.200	-.151	.081	.833	-.225	-.003	.515	-.028	-.042	.239	-.024	4
Q18	.678	.124	.253	-.164	-.017	-.428	-.041	.135	-.056	.165	-.031	4
Q19	.758	-.220	.151	-.242	-.036	-.303	-.046	.101	-.027	-.112	-.096	4
Q20	.679	.400	-.070	.064	-.073	-.153	.048	.209	-.153	.088	-.082	5
Q21	.573	.248	-.159	.172	-.336	.164	-.298	-.027	.160	-.053	-.185	5
Q22	.680	.137	.155	-.454	-.101	.153	.079	-.016	-.079	.100	-.175	5
Q23	.668	.154	-.182	-.192	-.254	.080	-.043	.284	.179	.003	-.087	5
Q24	.826	.128	-.047	-.039	.099	.139	-.089	-.090	-.080	.031	-.125	8
Q25	.718	-.091	-.167	-.077	-.336	.101	-.142	-.110	-.188	.148	.040	8
Q26	.743	.129	-.172	.114	-.142	.066	-.052	-.002	.309	.177	-.063	8
Q27	.731	.073	-.223	.001	-.200	.018	.070	-.048	-.158	-.094	-.060	8
Q28	.191	.446	.399	-.229	-.005	-.266	.089	-.249	.118	-.280	.261	7
Q29	.603	.208	.211	-.068	.111	.297	-.212	.013	-.340	-.012	.223	7
Q30	.757	.196	.002	.223	.045	.138	-.078	-.012	.155	-.012	.162	7
Q31	.622	.158	-.036	.342	.096	.002	-.091	.286	-.023	-.118	.273	7
Q32	.753	.059	-.184	.001	-.106	.059	.123	-.218	.065	-.171	-.229	8
Q33	.774	.144	.038	.021	.099	.182	-.072	-.013	-.093	-.135	.104	8
Q34	.730	.025	.191	.069	.141	.287	.132	-.044	.304	-.039	.017	8
Q35	.577	-.011	.322	-.098	.054	-.004	.390	-.182	.200	.106	-.075	8
Q36	.624	-.197	.339	.094	.048	.401	.183	.018	-.146	-.029	-.034	7
Q37	.779	.061	.261	-.035	-.017	.052	-.030	-.171	.104	.087	-.053	1
Q38	.713	.215	.087	.200	.089	-.242	-.144	-.002	.080	.321	-.014	4
Q39	.699	.385	-.090	.313	-.066	-.042	.097	.065	-.041	-.004	.109	3
Q40	.622	.066	.354	-.055	-.151	.020	.057	-.081	-.183	.127	.039	3
Q41	.620	-.525	.019	.123	-.145	-.117	.061	.199	-.169	-.176	-.018	3
Q42	.507	-.042	.241	.461	.237	-.136	-.242	.160	.062	-.139	-.018	2
Q43	.643	-.348	.208	.016	-.098	.004	-.193	.073	.152	-.162	.183	7
Q44	.719	-.347	.172	.014	-.299	-.100	-.094	.032	-.072	.055	-.026	2
Q45	.311	-.208	.210	.331	.325	.103	-.364	-.331	-.186	-.022	-.323	4

= (shaded) Positive significant correlation coefficients (p≤.05) (p=.288, df=45 (two-tailed test))

= (Border) Negative significant correlation coefficients (p≤.05) (p=.288, df=45 (two-tailed test))

= (shaded and border) Largest positive correlation coefficients for Factors 2-11

1). Ten items demonstrated higher correlations with "factors" other than factor 1, but none of these items loaded on the same factor.

This analysis hints of 11 factors within the SCCI but more strongly suggests that the instrument consists of a single factor. As the cluster column in Table 3 indicates, there was no pattern suggesting the clusters/factors identified by Wayson.

b. Application of the Oblique Solution Primary Pattern Matrix-Orthotran/Varimax

Because the Orthogonal Transformation Solution-Varimax analysis hinted at the possible presence of eleven factors in the SCCI, the Oblique Solution Primary Pattern Matrix-Orthotran/Varimax procedure was applied to the data. This second procedure differs from the first in that it rotates the "x" and "y" axes. Through this rotation process, it finds the angle that produces the largest correlation coefficients for each of the factors collectively. Although a typical research using factor analyses selects either the Orthogonal or the Oblique, this study used both procedures in order to evaluate the data from both perspectives. Table 4 displays the results of this second factor analysis. In this analysis, 11 factors containing one to twelve items each clearly emerge. Table 5 presents the factors, items within each and the relationships of those items to the clusters defined ***a priori*** by Wayson.

Obviously, factors 1 and 2 are the most dominant. Nine items loaded on factor 1, and 12 items loaded on factor 2. A review of the content of items clustering in these two factors suggests that factor 1 appears to address in a variety of ways a value for individuality and inclusion of persons within the school, both faculty/staff and students. Factor 2 includes these of equity, equality, shared decision-making and shared responsibility.

The third most dominant factor was factor 6 containing six items. Two items with significant correlations to this factor (items 21 and 23) overlap with factor 1. A major emphasis in this factor appears to be regular varied interactions among home, school and community.

Two other factors (factors 3 and 5) contain three or more items. Factor 5, containing four items appears to focus on the presence in the school of a participatory environment. Factor 3, encompassing three items, stresses teacher knowledge of community and students and, shared problem solving by adults and students in the school.

The remaining six factors contain no more than two items each. Factor 4 emphasizes due process and staff participation in community organizations capable of supporting students. Factor

Table 4

Application of the Oblique Solution Primary Pattern Matrix-Orthotran/Varimax

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	SCCI Cluster	Primary Factor
Q1	-.050	.391	-.147	-.101	.226	.316	-.060	.052	.027	.175	.297	1	2
Q2	.160	.411	-.024	-.083	-.020	.176	.127	-.127	.001	-.019	.439	1	11
Q3	.182	.503	.024	.016	.178	-.001	-.150	-.015	-.123	.110	.371	1	2
Q4	.288	.490	.044	-.101	.275	-.054	-.138	.020	.166	-.094	.078	1	2
Q5	.079	.023	.010	-.022	.215	.075	-.094	.047	.030	.699	-.045	1	10
Q6	.308	.513	-.034	-.082	.211	-.167	.115	.273	.064	-.122	.079	2	2
Q7	.127	.140	.110	-.069	.563	-.114	-.008	.174	-.024	.006	.042	2	5
Q8	-.012	-.076	.061	-.093	.805	.282	.093	-.296	-.134	.018	-.163	2	5
Q9	.429	.081	-.090	-.078	.297	-.039	.045	-.037	.092	-.049	.441	2	11
Q10	.119	.309	.148	-.038	.364	-.025	-.089	.105	.376	.056	-.036	3	5
Q11	-.275	.198	.001	.093	.450	.010	.074	-.047	.394	.270	.127	3	5
Q12	-.024	.106	-.192	-.013	.160	.694	-.146	-.146	.259	-.028	-.119	3	6
Q13	.394	.353	-.032	.219	.036	.143	-.030	-.206	.068	.060	-.285	3	1
Q14	.084	.480	.175	.075	.056	.158	-.125	-.117	.298	-.092	.112	3	2
Q15	.440	.000	.659	-.108	-.006	.131	.248	.098	-.229	-.091	-.138	3	3
Q16	-.108	.869	.039	.056	.020	-.034	.222	-.042	.016	-.019	-.073	4	2
Q17	.092	.029	-.250	.006	-.086	.013	.892	-.028	.020	.035	.031	4	7
Q18	-.014	.385	.248	.021	-.021	-.036	.001	-.038	-.025	.601	-.026	4	2
Q19	-.045	.755	.206	.002	.072	-.002	-.104	.015	.043	.208	-.151	4	2
Q20	.406	.014	.141	.089	.162	.139	.122	-.149	-.181	.392	-.086	5	10
Q21	.815	.000	-.029	.197	-.213	.120	-.097	.132	.090	-.029	-.120	5	1
Q22	.179	.248	.062	-.350	-.063	.500	-.159	-.079	.048	.266	-.126	5	6
Q23	.526	.243	-.043	.076	-.056	.118	-.171	-.304	.161	.133	-.164	5	1
Q24	.326	.103	.026	-.045	.212	.393	-.070	.153	.041	.140	.016	6	6
Q25	.450	.473	-.170	-.057	-.168	.280	-.044	.030	-.202	.073	.189	6	2
Q26	.697	.049	-.127	.081	-.057	.012	.048	-.024	.354	.178	.065	6	1
Q27	.487	.349	.066	-.071	.123	.184	.085	-.035	-.161	-.055	-.012	6	1
Q28	-.087	-.055	.853	-.129	-.180	-.018	-.035	-.044	.123	-.016	.146	7	3
Q29	-.048	-.028	.174	.156	.053	.770	-.159	.029	-.247	.077	.222	7	6
Q30	.319	-.062	.136	.259	.064	.259	.076	.001	.239	.013	.197	7	1
Q31	.120	.011	.173	.537	.221	.182	.116	-.166	-.016	.009	.142	7	4
Q32	.551	.265	.116	-.204	.164	.114	.091	.132	.139	-.153	-.122	8	1
Q33	.172	.095	.206	.131	.185	.472	-.046	.021	.012	-.050	.104	8	3
Q34	.088	-.019	.091	.037	.070	.402	.115	.001	.535	-.059	.025	8	9
Q35	-.075	.148	.162	-.333	-.023	.200	.300	.004	.426	.169	-.008	8	9
Q36	-.179	.205	-.062	-.004	.037	.755	.245	.050	.090	-.092	-.068	7	6
Q37	.166	.179	.139	-.070	-.107	.316	.048	.169	.257	.201	.059	1	6
Q38	.246	-.019	.031	.171	.039	-.029	.118	.146	.135	.569	.162	4	10
Q39	.449	-.103	.212	.204	.138	.147	.289	-.111	-.049	.117	.111	3	1
Q40	.004	.257	.149	-.091	-.207	.447	.159	.044	-.089	.253	.077	3	6
Q41	-.095	.861	-.074	.206	.107	.078	.188	-.027	-.120	-.122	-.136	2	2
Q42	-.082	.068	.166	.569	.188	.047	.124	.258	.137	.105	-.082	2	4
Q43	-.085	.810	.110	.315	-.160	.144	-.085	.020	.232	-.124	.080	7	2
Q44	.088	.780	-.069	.097	-.240	.148	.091	.078	-.029	.131	-.016	2	2
Q45	-.062	.000	-.098	.112	.204	.292	-.004	.780	-.033	.024	-.073	4	8
Total	9	12	3	2	4	7	1	1	2	2	2		

=Largest positive correlation coefficients for each of the 45 SCCI questions.

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Table 5 Eleven Factors Present in Wayson's SCCI as Defined by Oblique Solution Primary Pattern Matrix-Orthotran/Varimax Factor Analysis.

Factor 1	r	CL	Question
Q21	.815	5	Teachers choose the methods and materials which they can best use to achieve explicit goals.
Q26	.597	6	Individual and cultural differences are respected and valued and are openly expressed in the school.
Q32	.551	8	Staff members feel responsible for keeping the school environment attractive and clean.
Q23	.526	5	Field trips, outside speakers, and disciplinary practices are seen as ordinary teaching methods which teachers may use without extraordinary administrative procedures.
Q27	.487	6	People assist one another in ways that help them to become independent.
Q39	.449	3	Teachers know and respect the students' languages, cultures, and individual styles.
Q20	.408	5	Individual differences and a variety of learning styles are respected and accommodated.
Q13	.394	3	All students are actively included in classroom and school activities, regardless of sex, race, religion, socio-economic status or academic ability.
Q30	.319	7	Staff members recognize the stereotypes they may hold about the students and the community and work to see students and parents as individuals; the school community works in various ways to break down stereotypes.
Factor 2			
Q16	.869	4	Rules and expectations are clearly defined *, stated, and communicated so that people know what to do.
Q19	.755	4	A few good rules are made and enforced rather than having many rules which aren't enforced.
Q44	.750	2	Discipline in our school is firm, fair and consistent. All students are treated equally; no group "gets away" with things.
Q43	.610	7	Parents are interested in good discipline in the school and work with school personnel to obtain it.
Q6	.513	2	Status differences that imply inferiority or superiority of one staff or student group over another are eliminated.
Q3	.503	1	Nearly all members feel that the school belongs to them, and that he or she can make a difference in it.
Q4	.490	1	A large number of the staff is involved in planning and implementing school activities. Participation is high and widely distributed.
Q14	.480	3	Students feel responsible for keeping the school environment attractive and clean.
Q25	.475	6	If a person has a problem with another, he or she discusses it directly with that person.
Q1	.391	1	A sense of direction and mutual purpose is shared among many staff, students, and (to some extent) parents. (They can describe some goals and achievements in specific, understandable terms).
Q18	.385	4	Disciplinary techniques are used to teach positive ways of behaving, not just to punish or to teach blind obedience.
Factor 3			
Q28	.853	7	Staff members know the neighborhood, the street names, the stores, and the places of entertainment where their students live.
Q15	.659	3	Teachers know the names of their students, not only those in their classrooms but others in the school.
Q33	.206	8	Adults and students are able to analyze "trouble areas" in the environment and make provisions to solve problems.

Factor 4			
Q42	.559	2	Due process is applied before punishment (e.g., students have their say and know why they are being punished).
Q31	.537	7	Staff and administrators frequently participate in groups, institutions, and organizations within the community which can offer support to students and to the school (ex., churches, clubs).
Factor 5			
Q8	.805	2	School secretaries, custodians, and other school staff (such as bus drivers) participate in faculty meetings and inservice sessions.
Q7	.663	2	Each person accepts criticism from those who receive his/her services.
Q11	.450	3	Students participate in solving the problems of the classroom and the school.
Q10	.364	3	Many students are involved in the school's activities—in planning and in implementing. Participation is high and widely distributed.
Factor 6			
Q29	.770	7	School faculty members visit students' homes.
Q36	.755	7	Parents participate in school activities and/or are represented in some faculty meetings and inservice sessions.
Q12	.694	3	Students' work is displayed in classrooms, display cases, corridors, and cafeteria.
Q21	.500	5	Teachers choose the methods and materials which they can best use to achieve explicit goals.
Q40	.447	3	Each student has a definite contact, preferably an advocate, on the faculty.
Q23	.393	6	Field trips, outside speakers, and disciplinary practices are seen as ordinary teaching methods which teachers may use without extraordinary administrative procedures.
Q36	.318	1	Parents participate in school activities and/or are represented in some faculty meetings and inservice sessions.
Factor 7			
Q17	.892	4	Rules apply only to relevant behavior and not to matters that are trivial, highly personal, or have no effect upon the school or class.
Factor 8			
Q45	.780	4	School rules are written and steps are taken to see that each pupil/parent/school faculty member, etc., know the rules, or has a copy of the rules (code of conduct).
Factor 9			
Q34	.535	8	Places are designed where small groups can work together without having to talk loudly to be heard.
Q35	.426	8	The school is attractive and inviting.
Factor 10			
Q5	.689	1	School staff members know how to prevent discipline problems caused by adults, by school procedures or by the school organization.
Q38	.569	4	When decisions are made and procedures established, the educational growth of individual students takes priority over concerns such as adult convenience, pleasing superiors, saving face or maintaining tradition.
Factor 11			
Q2	.439	1	Problems do not fester; they are identified and resolved. The question, "What can we do?" replaces the sentiment, "It can't be done."
Q9	.441	2	Responsibilities and "territories" are shared and respected; people are not possessive nor are they fearful that someone will "take over" their job, space, or materials. They say "our school" and "our students", not "mine".

* = emphasis added

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7 and 8 both deal with school rules, but factor 7 focuses on relevancy and factor 8 stresses communication of rules. Factor 9 addresses the physical environment of the school. Factor 10 emphasizes prevention of discipline problems with priority for student growth. Factor 11 addresses perceptions of responsibility.

When studying the grouping of the items in the eleven factors produced by the Oblique Solution Primary Pattern Matrix-Orthotran/Varimax analysis, it appears that several factors are closely related to each other. However, the correlations also suggest that there are relatively discreet variations in the emphasis of a number of items in which the language initially might be perceived to produce clustering different than that which the factor analysis identified. A review of the CL columns in tables 4 and 5 again underlies that the sub-factors of climate perceived by Wayson to exist within the SCCI were not the sub-factors identified when the instrument was used in these six schools.

c. Intercorrelation of Factors

Table 6 displays the primary intercorrelations among factors as identified by the Primary Intercorrelations-Orthotran/Varimax procedure. Obviously, the four highest correlations (those above .400) were between factors 1 and 2, 1 and 6, 2 and 6, and 6 and 9. Note that factor 1, factor 2 and factor 6 were the three dominate factors (see **"Application of the Oblique Solution Primary Pattern Matrix-Orthotran/Varimax"** discussion).

d. Proportionate Variance Among Factors

Table 7 displays the proportionate variance among factors for both the Orthogonal and Oblique Factor Analysis. As might be expected, the Orthogonal-Direct statistic indicates that the majority of variance was due to Factor 1 and very little proportion of the variance was found in Factors 2-11. The Oblique-total statistic indicates that Factors 1, 2, and 6, the three factors containing the largest number of items were responsible for the largest proportion of variance.

Table 6

Primary Intercorrelations- Orthotran/Varimax

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11
Factor 1	1.000										
Factor 2	.403	1.000									
Factor 3	.259	.175	1.000								
Factor 4	.162	.161	.055	1.000							
Factor 5	.368	.351	.128	.118	1.000						
Factor 6	.415	.451	.268	.160	.283	1.000					
Factor 7	.123	.151	.091	.146	.082	.135	1.000				
Factor 8	-.024	.087	.024	.114	.011	.058	.078	1.000			
Factor 9	.264	.397	.174	.117	.259	.400	.122	.075	1.000		
Factor 10	.326	.345	.368	.137	.242	.340	.093	.029	.252	1.000	
Factor 11	.264	.241	.079	.054	.232	.189	.050	.075	.161	.136	1.000

= Correlation Coefficient greater than .400

Table 7 The Orthogonal and Oblique proportion of variance contributions for Factors 1 -11.

	Orthogonal	Oblique		
	Direct	Direct	Joint	Total
	r	r	r	r
Factor 1	.576	.140	-.004	.135
Factor 2	.070	.203	.004	.207
Factor 3	.056	.069	.000	.069
Factor 4	.051	.054	.002	.056
Factor 5	.048	.088	.010	.098
Factor 6	.044	.130	.000	.130
Factor 7	.036	.058	.000	.058
Factor 8	.034	.047	.000	.047
Factor 9	.030	.061	.006	.068
Factor 10	.028	.071	.016	.087
Factor 11	.027	.044	.001	.045

IV. DISCUSSION AND IMPLICATIONS

From this study alone, few conclusions can be drawn about Wayson's School Climate and Context Inventory. Additional studies using the data from many administrations are needed. However, several propositions can be put forward for discussion.

1. The climate of a school may be an entity-a whole, rather than a series of sub-factors or parts.

The finding in the one factor analysis that almost all SCCI items loaded on one factor suggests that this proposition warrants further attention. It is further highlighted by the fact that the SCCI itself appears to be valuable instrument containing valid items which measure something that might well be called school climate.

2. The SCCI may be measuring several factors which together constitute school climate, but they are not the factors originally conceptualized by Wayson.

As mentioned above, the findings of this study suggest the need for similar studies using data collected with the SCCI. There may be as many as 11 distinct factors being measured by this instrument. The amount of data processed in this study are not sufficient to reach a conclusion.

3. Defining and assessing school climate are complex tasks.

While we know a good it about climate, research into this phenomenon in not yet complete. We may not yet have truly defined it. We certainly have not yet developed the ultimate instrument for measuring it.

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Appendices

SCHOOL CLIMATE AND CONTEXT INVENTORY[1]

We are seeking information about the climate of your school. We request your help through your voluntary completion of this inventory. All resulting data will be combined for analysis; therefore, no individual responses will be identified. You are free to withdraw your participation at any time.

DIRECTIONS: Darken a number to rate your school from 1 to 5. A rating of 1 shows that the statement is **not true** of your school. A rating of 5 means that the statement is **very true** of your school.

NOT TRUE **TRUE**

1. (1) (2) (3) (4) (5) A sense of direction and mutual purpose is shared among many staff, students, and (to some extent) parents. (They can describe some goals and achievements in specific, understandable terms).
2. (1) (2) (3) (4) (5) Problems do not fester; they are identified and resolved. The question, "What can we do?" replaces the sentiment, "It can't be done."
3. (1) (2) (3) (4) (5) Nearly all members feel that the school belongs to them, and that he or she can make a difference in it.
4. (1) (2) (3) (4) (5) A large number of the staff is involved in planning and implementing school activities. Participation is high and widely distributed.
5. (1) (2) (3) (4) (5) School staff members know how to prevent discipline problems caused by adults, by school procedures or by the school organization.
6. (1) (2) (3) (4) (5) Status differences that imply inferiority or superiority of one staff or student group over another are eliminated.
7. (1) (2) (3) (4) (5) Each person accepts criticism from those who receive his/her services.
8. (1) (2) (3) (4) (5) School secretaries, custodians, and other school staff (such as bus drivers) participate in faculty meetings and in-service sessions.
9. (1) (2) (3) (4) (5) Responsibilities and "territories" are shared and respected; people are not possessive nor are they fearful that someone will "take over" their job, space, or materials. They say "our school" and "our students", not "mine".
10. (1) (2) (3) (4) (5) Many students are involved in the school's activities—in planning and in implementing. Participation is high and widely distributed.
11. (1) (2) (3) (4) (5) Students participate in solving the problems of the classroom and the school.
12. (1) (2) (3) (4) (5) Students' work is displayed in classrooms, display cases, corridors, and cafeteria.
13. (1) (2) (3) (4) (5) All students are actively included in classroom and school activities, regardless of sex, race, religion, socio-economic status or academic ability.
14. (1) (2) (3) (4) (5) Students feel responsible for keeping the school environment attractive and clean.
15. (1) (2) (3) (4) (5) Teachers know the names of their students, not only those in their classrooms but others in the school.
16. (1) (2) (3) (4) (5) Rules and expectations are clearly defined, stated, and communicated so that people know what to do.
17. (1) (2) (3) (4) (5) Rules apply only to relevant behavior and not to matters that are trivial, highly personal, or have no effect upon the school or class.
18. (1) (2) (3) (4) (5) Disciplinary techniques are used to teach positive ways of behaving, not just to punish or to teach blind obedience.
19. (1) (2) (3) (4) (5) A few good rules are made and enforced rather than having many rules which aren't enforced.
20. (1) (2) (3) (4) (5) Individual differences and a variety of learning styles are respected and accommodated.

* * OVER * *

21. (1) (2) (3) (4) (5) Teachers choose the methods and materials which they can best use to achieve explicit goals.

22. (1) (2) (3) (4) (5) Playgrounds, school buses, cafeteria, hallways, and lavatories are seen as places where students learn; teachers design and implement positive curriculum for teaching behavior in those areas.

23. (1) (2) (3) (4) (5) Field trips, outside speakers, and disciplinary practices are seen as ordinary teaching methods which teachers may use without extraordinary administrative procedures.

24. (1) (2) (3) (4) (5) Before rushing to solve a problem, people clarify whether there is a problem and define what it is.

25. (1) (2) (3) (4) (5) If a person has a problem with another, he or she discusses it **directly** with that person.

26. (1) (2) (3) (4) (5) Individual and cultural differences are respected and valued and are openly expressed in the school.

27. (1) (2) (3) (4) (5) People assist one another in ways that help them to become independent.

28. (1) (2) (3) (4) (5) Staff members know the neighborhood, the street names, the stores, and the places of entertainment where their students live.

29. (1) (2) (3) (4) (5) School faculty members visit students' homes.

30. (1) (2) (3) (4) (5) Staff members recognize the stereotypes they may hold about the students and the community and work to see students and parents as individuals; the school community works in various ways to break down stereotypes.

31. (1) (2) (3) (4) (5) Staff and administrators frequently participate in groups, institutions, and organizations within the community which can offer support to students and to the school (ex., churches, clubs).

32. (1) (2) (3) (4) (5) Staff members feel responsible for keeping the school environment attractive and clean.

33. (1) (2) (3) (4) (5) Adults and students are able to analyze "trouble areas" in the environment and make provisions to solve problems.

34. (1) (2) (3) (4) (5) Places are designed where small groups can work together without having to talk loudly to be heard.

35 (1) (2) (3) (4) (5) The school is attractive and inviting.

36. (1) (2) (3) (4) (5) Parents participate in school activities and/or are represented in some faculty meetings and inservice sessions.

37. (1) (2) (3) (4) (5) Students take responsibility for enforcing agreed-upon patterns of relationships with other students, teachers and administrators.

38. (1) (2) (3) (4) (5) When decisions are made and procedures established, the educational growth of individual students takes priority over concerns such as adult convenience, pleasing superiors, saving face or maintaining tradition.

39. (1) (2) (3) (4) (5) Teachers know and respect the students' languages, cultures, and individual styles.

40. (1) (2) (3) (4) (5) Each student has a definite contact, preferably an advocate, on the faculty.

41. (1) (2) (3) (4) (5) Rules and other expectations are clearly defined, stated, and communicated so that people know what to do.

42. (1) (2) (3) (4) (5) Due process is applied before punishment (e.g., students have their say and know why they are being punished).

43 (1) (2) (3) (4) (5) Parents are interested in good discipline in the school and work with school personnel to obtain it.

44. (1) (2) (3) (4) (5) Discipline in our school is firm, fair and consistent. All students are treated equally; no group "gets away" with things.

45. (1) (2) (3) (4) (5) School rules are written and steps are taken to see that each pupil/parent/school faculty member, etc., know the rules, or has a copy of the rules (code of conduct).

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APPENDIX B

Guttman's partial correlations

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45
Q1	.83																																												
Q2	.31	.71																																												
Q3	.32	-.10	.79																																										
Q4	.03	.24	.27	.80																																									
Q5	.11	.01	-.03	-.21	.76																																								
Q6	.05	.10	.18	-.01	-.11	.72																																							
Q7	.13	-.04	.06	.01	.02	-.01	.82																																						
Q8	.17	-.08	-.04	.01	.01	.04	.11	.84																																				
Q9	.09	.21	.15	.19	.21	.04	.12	-.01	.78																																			
Q10	-.04	.05	-.09	.30	.07	.14	.19	.16	-.14	.81																																		
Q11	.20	-.19	-.12	-.06	-.09	-.11	.02	.24	.25	.34	.89																																	
Q12	.47	-.11	-.37	.04	-.23	-.17	-.13	-.02	.06	.04	-.14	.79																																
Q13	-.05	-.11	-.17	.17	.22	.13	.10	.01	.16	.03	.02	.04	.74																															
Q14	-.13	.07	.13	.00	-.06	.17	-.04	-.02	.22	.15	.08	.14	-.14	.82																														
Q15	-.06	.01	-.10	-.01	-.21	-.22		.05	.08	.02	-.21	-.33	.14	.23	.72																													
Q16	.06	.16	.08	-.06	-.13	-.28	-.09	-.22	-.06	.04	.19	-.10	.22	.17	-.14	.82																												
Q17	-.17	.04	-.13	-.05	.05	.27	.02	.04	.17	.04	.16	.00	-.29	-.30	.25	.34	.85																											
Q18	.03	.24	.03	.06	.33	.10	-.08		-.41	-.16	.27	-.01	.14	.16	.12	.01	-.02	.81																										
Q19	-.36	-.09	.20	.09	.03	.14	-.03	.14	.14	.13	.11	.29	-.14	-.23	.17	.24	-.37	.26	.88																									
Q20	-.24	.01	.17	.09	.21	.19	.21	.15	-.04	-.13	.03	.41	-.15	-.26	.46	.28	-.13	.10	-.08	.90																								
Q21	.10	.06	-.11	.15	-.01	-.04	-.04	-.06	-.19	-.03	-.14	-.03	.23	.07	.10	-.10	.13	-.14	.05	.07	.83																							
Q22	.25	.06	-.05	-.04	.14	-.19	-.04	-.02	-.29	-.04	-.05	-.07	.22	.38	-.09	-.22	.20	-.12	.41	.06	-.12	.81																						
Q23	-.22	-.03	.15	.05	.04	-.11	-.12	.14	.05	.19	-.15	.20	.28	.02	-.10	-.04	.05	.12	-.23	.15	.09	.16	.73																				
Q24	-.06	.02	-.12	-.01	.02	-.02	.17	.13	.21	-.01	.02	.04	-.10	-.18	.00	.05	-.10	.24	-.02	-.04	.07	.18	-.10	.82																			
Q25	-.10	.11	-.02	-.05	-.23	-.06	.00	.12	.43	-.05	-.18	-.18	-.08	-.26	-.15	.00	-.14	.27	-.20	.09	.11	.23	.08	-.09	.82																	
Q26	-.09		.05	-.07	-.12	-.03	-.24	-.18	.17	.13	.16	.07	.12	.11	-.08	-.23	.09	.02	.08	.05	.14	-.13	.10	.26	.10	.79																	
Q27	.15	.03	.02	.09	.23	.19	.08	.02	-.19	-.03	-.04	.09	-.07	-.03	.16	.14	.06	-.24	.05	-.06	-.06	.14	.05	.12	.24	.29	.78															
Q28	.06	-.01	-.17	-.02	-.09	.11	-.20	-.07	.17	.23	-.09	-.09	-.02	-.25	.32	.03	-.30	.16	-.07	-.14	-.14	.05	.05	-.02	-.15	-.12	.16	.55														
Q29	-.07	-.04	.13	.12	.16	.12	.14	-.16	-.07	-.06	.18	.28	-.26	.04	.26	.15	-.21	-.08	-.12	-.18	.12	.21	.12	.20	.22	-.11	-.23	.09	.74													
Q30	.00	.02	.11	-.30	-.10	.11	-.06	-.09	.02	-.01	.13	.08	.13	.17	.07	-.12	.03	-.15	.16	-.04	.16	-.24	.13	.23	.15	-.26	.20	-.05	.00	.89												
Q31	-.10	.02	-.10	.20	.02	-.06	.05	.16	.02	-.30	.12	-.03	.02	.09	-.08	-.03	.01	-.07	-.05	-.04	-.04	-.06	.15	-.08	-.16	-.02	.11	.08	.11	.12	.87											
Q32	-.04	-.21	-.14	.15	.11	.42	.22	-.06	.14	-.01	-.07	.06	-.29	-.09	.27	.46	-.37	-.09	-.12	-.30	.20	.24	.15	.13	.03	.06	-.04	-.15	-.37	-.13	.05	.84									
Q33	.02	.12	.20	-.27	.13	-.20	-.13	.09	-.16	.14	.07	-.02	.00	.25	.03	-.13	.01	-.14	.07	.14	.10	-.22	-.02	.23	.14	-.19	.16	.06	.10	-.06	.22	.19	.79									
Q34	-.29	.22	.12	.18	.16	.15	-.05	.05	-.16	-.09	.27	.32	.07	-.12	.10	.07	-.11	-.33	-.33	-.04	-.09	.26	-.11	.08	.04	.13	-.35	.10	-.17	.18	-.17	.02	.24	.84								
Q35	.10	-.03	-.19	.12	.03	.04	.31	-.07	.02	-.19	.01	-.01	-.30	.10	.06	.07	.12	.22	.22	-.16	.01	.04	.26	-.23	-.08	.08	-.03	.12	-.16	.16	-.07	-.03	.06	.31	.71							
Q36	-.06	.16	.08	-.17	-.15	-.07	-.26	.21	.02	.08	-.15	.12	.37	-.08	-.07	-.19	.22	.02	-.10	.11	-.24	-.04	-.25	.05	-.11	-.04	.11	-.13	.44	-.05	.10	.33	-.07	.03	.36	.77						
Q37	.23	-.17	.01	.11	.15	-.28	.02	-.09	-.24	.11	-.06	-.10	-.13	.30	-.06	-.01	.24	.08	.11	.12	.05	-.10	-.07	.08	.32	.05	.00	.30	-.12	.19	.02	.14	-.19	.26	-.16	.24	.82					
Q38	.13	-.11	.07	.05	.32	.04	.01	-.25	-.03	.15	.07	-.08	-.22	-.10	.01	.05	-.07	.02	-.05	.18	.05	.09	.04	-.02	.10	.22	-.35	.08	-.18	.24	.28	-.04	-.02	-.08	.03	.11	-.05	.89				
Q39	.06	.06	.11	-.16	-.32	-.24	-.08	.15	.13	.07	-.20	-.09	.33	-.05	-.12	-.24	.36	.30	-.04	.28	-.09	.08	-.28	-.19	-.23	.18	.18	.06	.40	.23	.13	.48	.01	.12	.01	-.38	-.04	.18	.86			
Q40	-.05	.04	.08	-.07	-.01	-.02	-.02	.07	.12	-.07	.01	.12	.03	-.15	.12	.12	.02	-.04	-.02	-.08	.07	.25	-.08	-.07	.05	.05	-.06	.12	.06	-.10	-.10	-.04	.09	-.12	.13	.05	.07	.11	.03	.59		
Q41	.07	-.07	.04	.20	.17	.09	.07	.11	-.32	-.15		.17	.05	.21	.10	.45	.13	-.22	.22	-.22	-.13	-.19	.10	.03	.43	-.04	-.11	.09	-.26	-.04	.03	-.15	-.02	-.01	-.18	.23	-.21	.04	.25	-.06	.82	
Q42	.16	-.07	-.24	-.11	-.03	-.09	.13		.02	.03	-.13	-.31	.02	.20	-.22	-.08	.01	.13	.23	.17	.14	-.37	.01	.02	-.19		.22	-.02	.22	-.09	.15	.02	-.20	.42	-.12	.08	-.10	.11		.24	.11	.88	
Q43	.04	-.08	.03	.04	.06	.02	.33	-.25	-.04	.02	-.03	.04	-.15	.08	-.01	.17	.03	.11	.19	-.16	.05	.04	.13	-.17	.17	.19	-.23	.12	-.22	.17	.14	-.19	.16	.14	-.32	.30	-.08	-.33	.09	.11	-.11	.08	.74	
Q44	.33	.07	-.10	-.23	-.24	.13	-.23	-.24	-.12	.04	-.01	-.26	.35	.16	-.12	-.18	.24	-.09	.44	.19	.00	-.21	.07	.20	.16	-.16	.11	-.11	.21	-.29	.12	.12	-.06	.12	.18	-.11	.04	.15	-.15	.10	.10	-.09	.15	.84	
Q45	-.03	-.16	-.01	.17	.07	.34	-.01	-.14	.04	.10	.06	.22	-.10	-.36	.31	.07	-.13	.03	-.19	-.31	-.01	.14	-.08	.06	.05	-.03	-.15	-.23	-.06	.04	-.03	-.22	.28	-.19	.03	.08	.21	.06	.08	-.08	.09	.30	.01	.03	.56

☐ = The five smallest correlation coefficients

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